M4: A Living Lab Learning Community established in five countries

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1. Summary

The overarching objective of OneSTOP is to pioneer an innovative and joined-up approach to biosecurity for terrestrial invasive alien species (IAS), by applying cutting-edge technologies and strengthening the interconnections between animal, plant, human and environmental health. To test and demonstrate these cutting-edge technologies, OneSTOP is establishing a network of five living labs.

The Living Labs are based in Belgium, Finland, Romania, Portugal and the United Kingdom, representing different climatic and socio-economic conditions across Europe. Each Living Lab also overlaps with the physical location of one or more OneSTOP consortium partners.

In this report we summarise the establishment of the five Living Lab Core Learning Communities over the first eight months of the project (January-August 2025) and include a brief description of their initial face-to-face meetings. All have now established Core Learning Communities and are ready to start testing the key technological innovations for the detection and monitoring of IAS on sites and species of interest to their local region.

1.1. List of abbreviations

AU	Aarhus University
CIBIO	Associação BIOPOLIS
CU	Coventry University
EV-INBO	Eigen Vermogen van het Instituut voor Natuur-en Bosonderzoek
IAS	Invasive alien species
LUKE	Natural Resources Institute Finland
MBG	Meise Botanic Garden
PK	Platform Kinetics
UKCEH	UK Centre for Ecology & Hydrology
UOC	Universitatea Ovidius din Constanța

2. Introduction

The overarching objective of OneSTOP is to pioneer an innovative and joined-up approach to biosecurity for terrestrial invasive alien species (IAS), by applying cutting-edge technologies and strengthening the interconnections between animal, plant, human and environmental health. To test and demonstrate these cutting-edge technologies, OneSTOP is establishing a network of five living labs representing different climatic and socio-economic conditions in Europe.

A Living Lab can be described as an open innovation ecosystem that brings together diverse stakeholders to co-create, test, and refine solutions in real-world settings (European Network of Living Labs et al., 2025). The living labs provide not only the relevant operational real-world environment for demonstrating novel methodologies but also ensure that this happens with the involvement of local stakeholders and the public. In the case of the OneSTOP Living Labs this will include local stakeholders from across education and research, civil society, business and the public sector.

Figure 2.1: Map showing the locations of the five OneSTOP Living Labs across Europe © Google INEGI

The locations for the OneSTOP Living Labs are northern Portugal, Coventry and Warwickshire in the United Kingdom, the Dobrogea region in South-Eastern Romania, Belgium and the Uusimaa region in Finland (Figure 1). The rationale for the number, location and distribution of the Living Labs across Europe takes into account a range of socio-ecological, climatic and socio-political factors, and each coincides with the location of

one or more consortium partners. Each Living Lab will test a range of key innovations, including computer vision (vehicle-mounted CamAlien cameras and an automated monitoring of insects (AMI) trap), air-DNA, Sentinel Gardens, OneSTOP Alert, communications and data driven horizon scanning.

At the heart of each Living Lab is a Learning Community of around 10 stakeholders who form the core of each Living Lab going forwards. This milestone reports on the establishment of the Core Learning Communities for each of the five Living Labs.

As of August 2025, all five of the OneSTOP Living Labs have now held a face-to-face meeting and established their Core Learning Communities (Table 1). Some held their meeting first and then identified a Core Learning Community from a wider group of stakeholders (e.g. Portugal), whereas others identified a smaller group of stakeholders to invite to the initial meeting (e.g. Coventry, Uusimaa).

Here we provide a brief summary of each of their activities to date, reported in chronological order of their establishment meetings. Full details of the Living Labs stakeholder mapping, key sampling sites and target species will be reported in Deliverable **D3.1 Living lab learning communities mapping**.

Table 1: Summary of the dates, locations and attendees at each of the first Living Lab Core Learning Community establishment meetings held in 2025, and the size of the Core Learning Community going forwards.

Living Lab	Date of meeting	Meeting location	OneSTOP Partners	Total participants	External stakeholders	Core Learning Community going forwards
Portugal	08/05/25	BIOPOLIS	BIOPOLIS-CIBIO	41	36	28 individuals representing 13 organisations
United Kingdom	21/05/25	Centre for Agroecology, Water & Resilience, Coventry University	CU, with UKCEH and PK	15	9	~18 individuals representing 9 organisations
Romania	20/06/25	Faculty of Natural and Agricultural Sciences, Ovidius University of Constanța	UOC	25	20	~20 individuals representing 10 organizations
Belgium	24/06/25	Meise Botanic Garden, Vlaamse Hoeve	INBO & MBG	19	11	9 individuals representing 8 organisations
Finland	14/08/25	Scandic Grand Central, Helsinki	LUKE	12	8	9 individuals representing 9 organisations

3. Portugal Living Lab

The geographical focus of the Portugal Living Lab is the northern region of the country. The lead consortium partner is Associação BIOPOLIS, located in Vairão (Porto District). A stakeholder mapping exercise was conducted to identify organizations directly or indirectly involved in invasive species management. Relevant actors across the five sectors of the penta-helix model were then invited to a launch workshop held on May 8, 2025, at the Associação BIOPOLIS headquarters (Fig. 3.1).

Figure 3.1: Group photo of the Portugal Living Lab participants.

The workshop opened with an overview of OneSTOP by Joana Vicente (CIBIO), followed by presentations on the Living Lab vision (Eva Malta-Pinto, CIBIO) and technologies to be piloted (Cândida Gomes Vale, CIBIO). Then, a brief icebreaker activity facilitated participant introductions, after which attendees completed a baseline survey.

An interactive Mentimeter session followed, designed to explore stakeholder perceptions of biological invasions. Participants shared word associations, identified invasive species of concern in the region, expressed comfort levels regarding eradication of different taxonomic groups, and outlined their expectations for the Living Lab. These prompts generated brief group discussions. After a coffee break, a participatory mapping session allowed stakeholders to share local spatial knowledge. Stakeholders collaboratively identified areas of (a) invasive species presence, (b) perceived impact, (c) management priority, and (d) potential detection and testing sites.

Using a snowball sampling approach, two additional stakeholders from the region were later invited to join the learning community. Participants were grouped into a core (full participation) and a satellite group (targeted activities only). The core group was designed to

include at least two representatives from each penta-helix sector, comprising thirteen organizations in total.

By July 2025, the Portugal consortium received CamAlien. It was then delivered to the first stakeholder for field testing. The first core group meeting is scheduled for September 2025 to coordinate the planning and use of the CamAlien system.

4. UK Living Lab

The UK Living Lab is based around the geographic areas of Coventry, Warwickshire and Solihull in the centre of England. The lead consortium partner is Coventry University (CU). Following mapping of known and potential organisations working with invasive species within the Living Lab area, a range of stakeholders were invited to help select a date for an initial meeting to establish the Living Lab. Nine external stakeholders representing seven different organisations attended the initial meeting, held on May 21, 2025, at Coventry University's Ryton Gardens site (Fig. 4.1).

Katharina Dehnen-Schmutz (CU) welcomed participants and provided an overview of the project and Living Labs, while Alex Franklin (CU) led a session mapping participants' views, structures and practices relating to invasive species and identifying other key stakeholders. OneSTOP consortium partners Lori Lawson Handley (UKCEH) and Tom Myers (PK) presented the airDNA sampler, while Toke Thomas Høye (AU) joined online to provide an overview of the CamAliens vehicle-mounted camera system and the Automated Monitoring of Insects (AMI) Trap. Participants then drew on their local knowledge to identify potential sites and species for the testing of the different innovations. All stakeholders indicated their interest in participating in the core learning community going forwards.

Figure 4.1: Participants at the first Coventry Living Lab meeting discussing the project next steps and timeline.

Following the initial meeting, CU launched a Microsoft Teams group for sharing documents and information among the Living Lab core learning community and has been sharing regular updates. As of August 2025, the Living Lab has received two airDNA samplers and an AMI Trap to trial in locations identified during the initial meeting and is currently recruiting an additional stakeholder to the core learning community who runs one of the sites of interest.

5. Romania Living Lab

On the 20th of June 2025, Ovidius University of Constanța (UOC) hosted the first OneSTOP Living Lab in Romania, at the Faculty of Natural and Agricultural Sciences in Constanta (Fig. 5.1). This event marked the start of a collaborative process aimed at exploring solutions for the management of invasive alien species (IAS) in Dobrogea, a region in the south-eastern part of Romania facing mounting pressure from invasive alien species.

In preparation for the workshop, the organising team carried out a stakeholder mapping exercise to identify potential participants, focusing on key stakeholders involved in invasive species management in the region. Using the snowball technique, additional potential stakeholders were identified during the workshop, expanding the network for future Living Lab activities.

The event brought together 20 external participants, i.e. researchers and representatives of public authorities, NGO's and the private sector (Fig. 5.1). Carla Gavrilescu and Cristina Preda (UOC) welcomed the participants and opened the workshop with an overview of the OneSTOP project and an introduction to the Living Lab model as a framework for participatory, real-world innovation. Participants were also introduced to innovative technologies for early detection and monitoring of IAS. Daniyar Memedemin (UOC) initiated a discussion on IAS management options and best practices, followed by a stakeholder consultation session focused on identifying IAS and locations of interest in Dobrogea.

Figure 5.1: Group photo of the Romanian Living Lab participants.

The participants actively engaged in open discussions throughout the workshop, sharing experiences and insights related to regional IAS challenges. The workshop concluded with a drone demonstration, offering participants the opportunity for hands-on experience.

The event successfully strengthened the local community of stakeholders and facilitated building a long-term collaborative network. All participants manifested interest in contributing to the testing and optimisation of innovative detection and monitoring systems for IAS developed in the OneSTOP project. They also reached a consensus on the importance of collaboration across sectors and the need for a strategic, long-term approach to protect Romania's biodiversity from the threats posed by IAS.

To facilitate communication with stakeholders, we created a dedicated email address for sharing updates and relevant information. Upcoming activities will focus on testing the CamALIEN system (autumn 2025) and on the identification of target species and priority sites.

6. Belgium Living Lab

On Tuesday, 24 June, the OneSTOP project launched its Belgian Living Lab (Fig.6.1) with a full-day workshop organised by the Research Institute for Nature and Forest (INBO) and Meise Botanic Garden (MBG). The event brought together researchers, land managers, conservation practitioners, technology developers and regional governments from across Belgium to test and co-develop innovative technologies for detecting and monitoring invasive alien species (IAS). Participants were introduced to the OneSTOP project, its vision, and the suite of monitoring tools to be piloted in the coming months, including DNA-based identification techniques and AI-enabled detection systems.

Figure 6.1: Group picture of the Belgian Living Lab participants

Technologies such as the CamAlien system and the AMI trap were on display, giving participants a chance to see the equipment up close. Presentations by Bram D'Hondt (INBO) and Lori Lawson Handley (UKCEH) introduced the use of computer vision and airborne eDNA for early detection of invasive species.

Facilitating introductions among all participating stakeholders was a central part of the day. Attendees shared perspectives from different sectors and discussed practical needs and opportunities for improved invasive species surveillance in Belgium's diverse landscapes. An interactive mapping session invited attendees to indicate species of concern and suggest priority test sites, helping to align upcoming fieldwork with local priorities. The day concluded with a behind-the-scenes tour of the greenhouses at MBG, including a visit to the "exotheek" to explore invasive species within the living collections.

Together with the stakeholders, we determined the location for the next Living Lab meeting. The CamALIEN will be tested during fall 2025 in the forests of Limburg, a province in

Flanders. After the meeting, INBO and MBG have set up a LinkedIn group for communication and a Notion group that will serve as a document storage platform.

7. Finland Living Lab

The Living Lab is based around the geographic areas of Helsinki, in the Province of Uusimaa in southern Finland. The lead consortium partner in Finland is Natural Resources Institute Finland (LUKE), with its head office located in Helsinki. Potential organisations working with the detection and management of invasive alien species (IAS) within the Living Lab area were mapped with the aim to involve stakeholders from different parts of society – research institutes, the business sector, government administration, and civil society. The first meeting, held on August 14, 2025 at Scandic Grand Central in Helsinki (Fig. 7.1), brought together eight external stakeholders representing eight different organisations to explore innovative solutions for detecting and monitoring IAS.

Figure 7.1: Group photo of the Finland Living Lab participants.

The meeting opened with an overview of the OneSTOP project and the objectives of the Living Lab activities, presented by Anna Poimala (LUKE), followed by presentations of the airDNA and automated camera technologies to be tested in the Living Labs (Lori Lawson Handley (UKCEH) and Toke Thomas Høye (AU)). The latter part of the meeting was marked by discussions about the IAS detection methods and the future activities of the Living Lab. In addition, participants identified potential sites and species for the testing of new technologies. All stakeholders indicated their interest in participating in the core learning community going forwards. The representative of one organization could not attend the first meeting but will participate in the work of the core learning community. In total, nine organisations will be involved. After the meeting, LUKE set up a Teams group for communication and document sharing.

In July 2025, LUKE received an AMI trap. It was on display at the Living Lab meeting, and preliminary testing will begin in fall 2025. The Finnish Living Lab participants will start testing the airDNA sampler and the CamAlien in 2026, following further discussions in the next core group meeting in early 2026. In addition, the core group will discuss sentinel gardens and citizen science activities.

8. Acknowledgements

We thank all the stakeholders who are participating in our Living Labs for their time and expertise, and everyone who has provided support in organising the in-person meetings. Thanks also to our consortium partners for presenting at our Living Lab meetings and coordinating delivery and/or set-up of the innovations for testing.

9. References

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